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ABSTRACT

This issue reviews recent studies conducted by the Educational Testing Service (ETS). Three sections are included. The first section--"Enough Good Teachers?"--examines teacher availability and concludes that there currently is an undeniable shortage of minority teachers. However, there are some encouraging signs of renewed interest in teaching among college students, and there is evidence of improvement in the quality of teachers. The second section--"Characteristics of Minority NTE Test Takers"--reviews the background and achievements of minority group members (chiefly Black and Hispanic teacher candidates) who take the National Teacher Examinations (NTE) tests. A study of successful and unsuccessful candidates found that strong academic preparation and support programs are essential for development of prospective minority teachers. The third section--"Good Teaching: How Is It Defined?"--introduces the successor to the NTE (the Praxis Series: Professional Assessments for Beginning Teachers). The new assessments will examine four broad areas: (1) content knowledge for teaching; (2) teaching for student learning; (3) the classroom community for student learning; and (4) teacher professionalism. The new assessments reflect the metaphor of teachers as managers of classroom life. Three figures are included. (SLD)

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ETS POLICY NOTES

News from the ETS Policy Information Center

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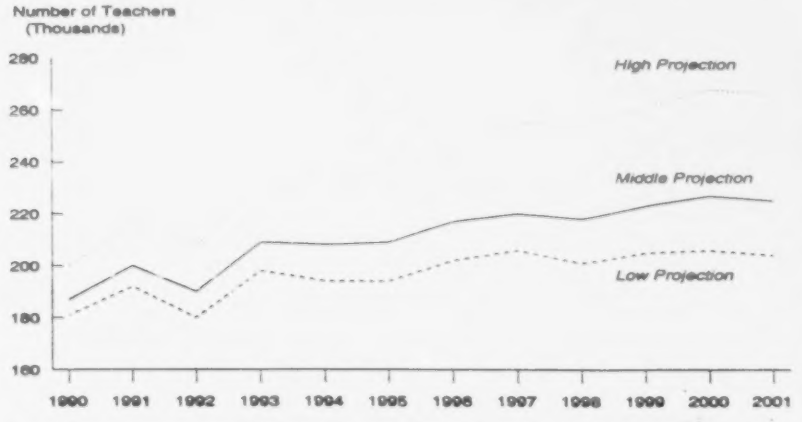
Enough Good Teachers?

The achievement of national educational goals hinges, in large measure, on a qualified teaching force. Qualified teachers know the subject areas they teach and are equipped with the skills and techniques to engage students in the subject matter. Yet many school systems find it challenging just to get enough teachers to fill available slots. And if those teachers are to be really qualified — under currently escalating standards of student achievement and teacher accountability — the task of finding enough qualified teachers seems daunting indeed.

Figure 1
Demand for New Hiring of Classroom Teachers in Public Elementary and Secondary Schools, with Alternative Projections



Source: "Projections of Education Statistics to 2001: An Update," National Center for Education Statistics, December 1990. Note: High projection assumes that the turnover rate will increase twice as fast as the retirement rate; middle projection assumes equivalent rates; low projection assumes half the rate.

The Supply Side

While analysts continue to debate whether the "reserve pool" of teachers is sufficient to avert a shortage, the National Center for Education Statistics estimates that even under the most conservative assumptions, the nation will need to hire around 2 million teachers between now and the year 2001 (see Figure 1). Many districts currently report teacher shortages in such areas as mathematics, physical science, foreign language, special education, and bilingual education. Some inner city and rural districts report across-the-board shortages.

While a looming overall shortage may be debatable, the shortage of minority teachers is a fact. Yet students from minority groups comprise an increasing proportion of the nation's school population. According to the 1990 census, minority groups represent 20 percent of the United States population, and that figure is increasing. Clearly, the need for a culturally diverse teaching force is growing.

Yet the demographic gap between students and teachers remains large. According to the American Association of Colleges for Teacher Education (AACTE) Research about Teacher Education (RATE) survey of primarily junior and senior teacher education students, 92 percent were White, 81 percent were female, and 60 percent said they spoke

(continued on page 6)

This Issue: Teaching

- Enough Good Teachers?
- Characteristics of Minority NTE Test Takers
- Good Teaching: How Is It Defined?

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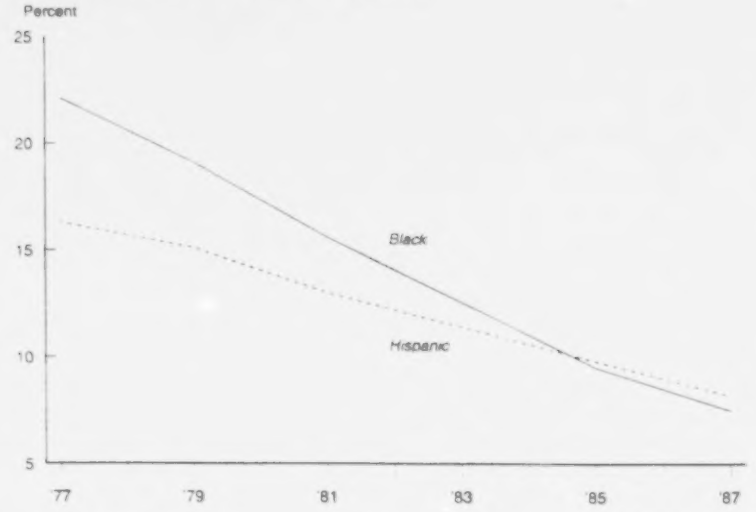
Characteristics of Minority NTE Test Takers

Several factors underlie the national shortage of minority teachers. Black and Hispanic students are less likely than White and other minority students to complete high school and to attend college. Those who do enroll in college are less likely to get a degree. Minority students who graduate from college are recruited heavily by business, academia, and the professions.

As a result, the percentage of Black and Hispanic college graduates awarded degrees in education has decreased drastically (see Figure 4). According to the National Center for Education Statistics, the total number of bachelor's degrees in education awarded to Black and Hispanic students fell from nearly 16,000 in 1977 to 6,500 ten years later. The number of degrees in natural and computer sciences, engineering, business, and other technical/professional fields awarded to these students grew from 33,000 to more than 53,000 during the same period.

The imposition of testing requirements for entrance into teaching is also reducing the minority teacher supply. Regardless of the type of test used or the area assessed, minority teaching candidates have substantially lower passing rates than majority candidates do. Using data from the 1987-88 NTE administration, ETS researchers found that, at the median state qualifying score on the NTE Core Battery™ Test of Communications Skills, 90 percent of the White examinees would qualify, compared to 47 percent of the Black and 61 percent of the Hispanic examinees. Similar patterns are found with other teacher certification tests.

Figure 4
Percentage of Black and Hispanic College Graduates Awarded Degrees in Education, Selected Years



Source: "The Condition of Education, 1990," Volume 2, Postsecondary Education, National Center for Education Statistics.

The potentially high rate of attrition among current minority teachers threatens to make the situation even worse. In 1988, 41 percent of Black and Hispanic teachers polled in a national survey conducted by Metropolitan Life said they will probably leave teaching in the next five years, compared to 25 percent of the White teachers surveyed. The attrition rate is compounded by the Southern Education Fund's finding that more than one-third of the Black teachers in the South have 25 or more years experience and are rapidly approaching retirement.

While the need to increase the supply of minority teachers is apparent, the most productive way to do it remains unclear. We know very little about minority teaching candidates who meet state certification requirements and those who do not. To provide more information, ETS researchers Richard J. Coley and Margaret E. Goertz studied the 4,004 Black and Hispanic examinees who took the October 1989 administration of the NTE Core Battery Test of General Knowledge. The researchers gathered information on students' backgrounds and assessed the differences between successful and unsuccessful candidates, based on their NTE scores.

Differences Between Successful and Unsuccessful Candidates

Candidates were separated into two groups according to their scores on the Test of General Knowledge. Successful candi-

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dates were defined as those who scored at least 649. These candidates would pass in all but one state that requires the test; the state in question uses a relatively high cut score for graduates of out-of-state institutions and for in-state teacher candidates who do not take the required teacher education coursework. Unsuccessful candidates were defined as those scoring below 639. These candidates would meet NTE test score requirements in only one state.

High and low scorers differed on five sociodemographic characteristics — gender, fluency in languages other than English, parent education, parent occupation, and high school rank. High-scoring Black candidates were more likely to have come from families with higher socioeconomic status than low scorers and to have been in the top quarter of their high school graduating classes. High-scoring Hispanic candidates were more likely not to be fluent in languages other than English, to have parents with higher education levels, to have mothers who were more likely to work and to work in skilled or professional occupations, and to have a higher rank in high school. Both Black and Hispanic male test takers were more likely to be high scorers than were their female counterparts.

Differences were also found in educational background. High scorers were more likely to have advanced degrees, higher grade point averages, and undergraduate majors or minors other than education. Among candidates enrolled in undergraduate education programs, secondary education majors scored higher than early childhood education majors did. At the graduate level, high scorers were somewhat more likely to be enrolled in teacher education programs.

Finally, differences were observed in respondents' career paths. High scorers were less likely than low scorers to plan on making teaching their career, but were more interested in teaching in low-income urban or suburban communities. High scorers were more likely than low scorers to seek certification in secondary education.

Conclusion

This study, like others documenting the relationship between social and economic advantage and achievement, suggests that strong academic preparation and support programs are essential to the development of academic talent, especially among students from minority groups. Increasing the pool of minority teachers who meet state certification requirements may depend on increasing the quality of their elementary and secondary schooling.

Coley and Goertz found four implications of these findings to be particularly noteworthy:

- Prospective minority teachers are often the first generation in their families to attend college. They frequently come from families with limited financial resources and enter college with less academic preparation than their more advantaged peers. Colleges and universities must develop support programs that are geared to the academic and financial needs of these students.

- Low socioeconomic status students who succeed in college pass the NTE Test of General Knowledge. Colleges and universities can and do make the difference for disadvantaged students.

- The data show that prospective minority teachers take varied routes to a teaching career — about half in the study had another career before becoming interested in teaching. Efforts to recruit and prepare minority teachers should recognize prospects among those already employed in other fields, as well as those who come to the profession by traditional teacher preparation routes.

- Only half of the successful minority test takers plan to make teaching their career. To retain talented teachers from all racial/ethnic groups in the classroom, changes must be made in the structure and environment of the teaching profession to make it more attractive.

Copies of "Characteristics of Minority NTE Test Takers" are available from Research Publications, 05-R, Educational Testing Service, Rosedale Road, Princeton, NJ 08541-0001. Order RR-91-4.

[1]The NTE Core Battery, administered by Educational Testing Service, consists of three tests — General Knowledge, Professional Knowledge, and Communications Skills. The Test of General Knowledge is used as part of teacher certification requirements in 22 states and is the only testing requirement in some large states.

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Good Teaching: How Is It Defined?

In 1987, Educational Testing Service's Board of Trustees authorized development of a totally new generation of teacher assessments, founded on extensive research and committed to the highest degree of fairness. The new assessments, which utilize advances in research and technology, are tied to a vision of teaching as complex, requiring action and decision making, and demanding knowledge of both subject matter and appropriate ways of reaching students from different backgrounds. On April 12 of this year, the ETS Board of Trustees announced the name for the successor to the National Teacher Examination — The Praxis Series: Professional Assessments for Beginning Teachers.™

The main purpose of the new framework for teaching is to strengthen the development of the new assessments. The following synthesis of its major elements was prepared by ETSers Carol Anne Dwyer, senior development leader for the new assessments, and Ana Maria Villegas, research scientist. It is based on a number of research studies and investigations carried out at ETS under the direction of Alice Sims-Gunzenhauser, test development examiner, and Sue Street, program administrator, and will undergo further refinement, based on experience. A listing of this research, and information on its availability, is provided on page 8.

The metaphor of teachers as managers of classroom life has been used in developing the framework for teaching that supports the new assessments. Classroom life is complex and dynamic. Teachers must manage instructional content, relationships between students and content, and interactions among members of the classroom. They must also communicate effectively with other educators and with the larger community, including families. These four broad areas of responsibility provide the structure for a teaching framework.

Content Knowledge for Teaching

This domain focuses on the importance of teachers' knowledge of content in planning, implementing, and evaluating instruction. Content knowledge — defined in these criteria as knowledge, skills, and values that are part of the curriculum — is the foundation for making informed decisions on the sequence of instruction. To be effective, teachers must organize activities within a single instructional event, recognize the interrelationships among instructional events that form a unit, and understand the more global curricular context of instructional units. A thorough knowledge of subject matter is also needed to select curricular materials and other resources, instructional activities, and evaluation strategies suitable for content goals.

Criteria for judging this aspect of teaching include:

- Demonstrating knowledge of content through instructional events that are logically sequenced and that are sound and accurate reflections of the content.
- Demonstrating an understanding of the connections between the content of an instructional event and what was studied previously or remains to be studied in the future.
- Creating or selecting curricular materials and other resources, learning activities, and evaluation strategies that are clearly linked to the intent or goal of the instructional event.

Teaching for Student Learning

This domain concerns the decisions and actions required of teachers in order to make content comprehensible to individual students — doing what is necessary so that each pupil learns. Broadly speaking, teaching entails engaging students as active learners to induce changes in their preexisting knowledge, skills, and learning strategies. Teachers must build instruction on students' strengths and prior learning, as well as accommodate differences among students. They must also be aware of important signals regarding the course of instruction, making inferences about possible misunderstanding of content and deciding whether to adhere to the instructional plan or to deviate from it. Moreover, teachers must communicate to students what they are expected to learn and why.

Criteria for judging this aspect of teaching include:

- Students' prior knowledge of the content and building on their academic strengths during instruction.

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- Accommodating students' individual interests, developmental levels, and cultural resources by engaging them in a variety of learning activities.

- Monitoring students' understanding of content through a variety of means, providing feedback to students to assist learning, and adjusting learning activities as the situation demands.

- Making learning expectations clear to students, setting high expectations for all, and helping students take responsibility for their own learning.

- Making content comprehensible to students through clear and focused explanations, and meaningful examples, analogies, metaphors, and/or demonstrations.

- Encouraging students to extend their thinking beyond factual knowledge.

The Classroom Community for Student Learning

The classroom is a community organized for academic purposes. As in all communities, life in the classroom must be organized so that activities can be accomplished. There are many different ways of organizing instructional activities or events, each with its own rules for participating teachers and students.

A safe and well-functioning classroom community requires ground rules for the variety of learning events students will encounter. In addition, teachers must create an interpersonal environment in which learning can occur. This setting demands rapport and respect among members of the classroom community. Teachers must be aware of cultural differences in interaction styles so they can interpret students' behavior accurately and respond appropriately.

Criteria for judging this aspect of teaching include:

- Creating a purposeful and well-functioning learning community with convenient and well-understood classroom routines.

- To the extent possible, creating an attractive and safe physical environment arranged in ways conducive to student learning.

- Making standards of behavior and consequences of misbehavior clear to students; handling disruptions efficiently and with respect.

- Creating a classroom climate that ensures equity and respect for and among students.

- Establishing and maintaining rapport with students.

- Communicating high expectations for the learning and behavior of all students.

Teacher Professionalism

Teachers' reflection on and communication about their own work is important to their students, to themselves as developing professionals, and to teaching as a profession. Teachers need to be able to use a variety of strategies to evaluate how well their students are learning. Good teachers must also, however, reflect on their own instructional effectiveness to determine what works and what doesn't, if they are to improve their own teaching. The teaching profession, as a whole, also benefits from the collegial sharing of experience, enabling teachers to learn from and teach one another. This experience permits broad considerations of students, school structure, and coordination of learning experience. Teacher professionalism also includes interactions with the community in general and with parents in particular.

Criteria for judging this aspect of teaching include:

- Reflecting on and analyzing one's own instruction; characterizing successes and failures; identifying actions taken and rationales for them; and determining the extent to which instructional goals are met.

- Explaining how insights gained from instructional experiences can be used to improve instruction.

- Demonstrating acceptance of personal responsibility for student learning.

- Building professional relationships with colleagues to share teaching insights and coordinate learning activities for students.

- Communicating with parents regarding student learning, and, where appropriate, interacting effectively with the community.

For more information on the new series of assessments, write to Carol Dwyer (01-P), ETS, Rosedale Road, Princeton, NJ 08541-0001.

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Enough Good Teachers?

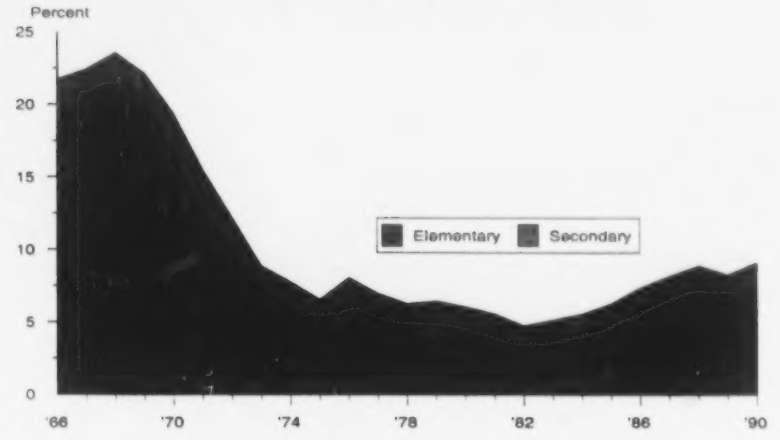
(continued from page 1)

only English. Fewer than 3 percent of those who said they had studied another language claimed fluency in it.

Projections indicate that by the year 2000, Black teachers may comprise as little as 5 percent of the teaching force. Declining numbers of minority teachers may be the result of a limited number of minority students entering and completing college; increasing competition from business, academia, and the professions for minority students; and the increasing use of teacher testing, which may reduce the numbers of minorities who are permitted to teach. (See "Characteristics of Minority NTE Test Takers" in this issue of *Policy Notes*.)

There are, however, some encouraging signs. As shown in Figure 2, interest in teaching among college freshmen is on the upswing. According to a survey by UCLA's Higher Education Research Institute, the percentage of students entering teacher education programs has nearly doubled since the early 1980s. In 1990, 9 percent of college freshmen said they were pursuing teaching careers, up from 8.2 percent in 1989 and 4.7 percent (the lowest proportion in the history of the survey) in 1982. The AACTE survey found that between 1985 and 1988, the number of students enrolled in teacher education programs increased 61 percent. The most dramatic gain — a 200 percent increase — was in the number of students with bachelor's degrees who were enrolled in teacher education programs.

Figure 2
Trends in College Freshmen Interest in Teaching Careers



Source: Higher Education Research Institute, UCLA

The growing appeal of a teaching career is probably due to a combination of factors — reports of teacher shortages, pay increases (the AFT reports that the average teacher salary increased 78.5 percent between 1980-81 and 1989-90), the perception that teaching is a secure profession during economically uncertain times, increased financial aid for teacher education programs, a climate of national education reform, and media campaigns to enhance the image of the profession.

The Quality Side

It is particularly noteworthy that increased interest in teaching has come after standards for entrance into the profession were strengthened — both at the state and institutional levels. In 1980, only a handful of states, primarily in the Southeast, required individuals to pass a test before being certified to teach. In 1990, 39 states required aspiring teachers to pass a state-prescribed, standardized test before entering a teacher education program and/or before being certified to teach. In addition, three more states are in the process of validating such tests.

At the institutional level, many colleges and universities have increased admission requirements to teacher education programs. The result, according to AACTE officials, is that it is now harder to gain entrance to the education school than any other program in some institutions.

While the evidence is limited, higher standards may be starting to pay off. The average scores of college-bound seniors who take the SAT and the percent of seniors interested in a teaching career have been on the rise (see Figure 3). Thus, the quality of these students (as measured by the SAT) has been increasing along with the quantity. The AACTE reports that

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Figure 3
Percentage of College-Bound Seniors Intending to Major in Education, with Mean SAT Scores of Intended Education Majors*

Source: "College-Bound Seniors, Profile of SAT and Achievement Test Takers," The College Board, 1981-1990.
**College-Bound seniors who took the SAT and intend to major in education.*

the typical preservice teacher in elementary education graduated in the top third of his or her high school class, with a combined score of 898 on the SAT. This score is close to the national average for all entering freshmen.

The AACTE survey provides information from teacher educators and from their students about the quality of teacher training. In general, the survey found that supervisors' and students' perceptions of the quality of teacher preparation are often positive. But quality across teacher education institutions does vary. Problem areas include prospective teachers' abilities to assume certain basic teaching functions, to work in urban and rural settings, and to work with children whose backgrounds are different from their own. For example, almost a third of the preservice teachers report concerns in terms of their planning for and delivery of instruction, and almost half report classroom management or student discipline problems during their student teaching experience. Depending on the type of institution, only between 18 and 30 percent of college-based supervisors agreed or strongly agreed that teacher education program graduates are well prepared to teach in a culturally diverse setting or to teach at-risk students.

As the new decade begins, the evidence of improvement in the supply and quality of teachers is generally positive, although not yet conclusive. In addition, many movements in the profession, if implemented, would continue the positive trend of producing more teachers as well as teachers who are better qualified to enter the profession.

For information about the RATE surveys, write to the American Association of Colleges for Teacher Education, One Dupont Circle, Suite 610, Washington, DC 20036-2412.

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Selected Research Conducted for The Praxis Series: Professional Assessments for Beginning Teachers™

"Assessing the Beginning Teacher: Guiding Conceptions" — Carol Anne Dwyer and Ana Maria Villegas.

"What Is Good Teaching? A Review of the Literature" — Anne Reynolds and Pat Elias.*

"Culturally Responsive Pedagogy for the 1990's and Beyond" — Ana Maria Villegas.*

"Knowledge-Base Building: Job Analysis of Teaching" — Michael Rosenfeld.*

"Content Synthesis of Currently Used State-Wide Performance Assessment Instruments" — Sue Street.

"Proposed Content Specifications for Performance Assessments of Beginning Teachers" — Alice Sims-Gunzenhauser.

"Knowledge-Base Building: Analyzing and Developing Methodologies in Teacher Assessment" — Carol Myford, Ruth Austria, Ana Maria Villegas.

*Available in draft form.

For copies, write to Claire Hellewell (01-P), Educational Testing Service, Princeton, NJ 08541-0001.

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